

Fact Sheet
June 2004

Managing Mercury Switches Found in Vehicles



SCRAP RECYCLERS, AUTO DISMANTLERS, AND AUTO REPAIR SHOPS

DTSC is one of six Boards and Departments within the California Environmental Protection Agency. The Department's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California



California
Environmental
Protection Agency



This fact sheet provides information about changes to California laws dealing with mercury light switches. The changes affect auto dismantlers and scrap metal recyclers that handle discarded vehicles. They also affect auto repair shops that handle mercury switches while repairing and maintaining vehicles. The fact sheet discusses how to remove, replace, and handle mercury switches, and what to do if you have a mercury spill.

What is mercury?

Mercury is a metal that has some useful properties: it is a liquid at room temperature and it conducts electricity. Because of these properties, it is used in switches that turn on the lights under the hoods and trunks of some vehicles. A mercury light switch is a small bullet-shaped capsule that contains mercury and two electrical contacts. When the hood or trunk is opened, the mercury inside the switch moves to one end of the capsule, where it touches both contacts. This allows electricity to flow through the switch and causes the light to go on. When the hood or trunk is closed, the mercury moves away from the two contacts and the light goes out.

Mercury is also very toxic. Long-term exposure to mercury can cause birth defects, permanent brain damage, and even death. Mercury can enter the body in several ways. It can be inhaled, absorbed through the skin, or eaten with contaminated food. When mercury is not disposed of safely, it can spread into waterways and harm people and wildlife.

New laws for managing mercury switches

In 2001, the California Legislature passed a law known as Senate Bill (SB) 633, or the California Mercury Reduction Act. SB 633 banned the sale of certain products that contain mercury. The bill encouraged people who dismantle, recycle, and repair vehicles to remove mercury light switches from them. It also made the rules for handling waste mercury light switches simpler. For more information on SB 633, refer to the fact sheet, "Senate Bill 633: California's Mercury Reduction Act of 2001" on the Department of Toxic Substances Control's (DTSC) Web site, www.dtsc.ca.gov/Schools/EA_FS_SB633.pdf.

In March 2003, DTSC adopted the Mercury Waste Classification and Management regulations. These regulations clarified the rules for people who handle

mercury switches that have been removed from vehicles. They also changed the rules for people who dismantle and recycle vehicles.

Even before the laws changed, unwanted mercury switches from vehicles were considered hazardous waste. Beginning January 1, 2005, any vehicle that contains a mercury light switch in the hood or trunk will be considered a hazardous waste as soon as someone decides to prepare the vehicle for recycling by crushing, baling, shredding or shearing. The vehicle will remain a hazardous waste until the mercury light switches are removed. Vehicle parts that contain mercury switches will also be considered hazardous waste. None of these materials may be disposed of in an ordinary (municipal solid waste) landfill. In most cases, crushing a vehicle without removing all mercury light switches will be illegal.

Under the new laws, mercury light switches may be handled under “universal waste” rules that are simpler than the ones for most other hazardous wastes. Currently, State law encourages people who recycle vehicles to remove mercury light switches before they crush or recycle a vehicle. (For more information about these rules, refer to the fact sheet, “Managing Universal Waste in California” on DTSC’s Web site, www.dtsc.ca.gov/PublicationsForms/HWM_FS_UWR.pdf.) Beginning January 1, 2005, if you crush or shred vehicles, you will first have to remove the mercury light switches. Switches which are not removed due to pre-existing damage to the vehicle are not required to be removed.

Universal wastes are hazardous wastes that are more common and pose a lower risk to people and the environment than other hazardous wastes. Federal and State regulations identify universal wastes and provide simple rules for handling, recycling, and disposing of them.

Which vehicles contain mercury switches?

Appendix A lists vehicle makes and models that contain mercury switches in the hood or trunk. The list

is based on the best available information and does not cover all vehicles. Unless you are sure, it is safest to assume that the light switches in a vehicle’s hood and trunk contain mercury.

Who should remove mercury switches from vehicles, and when?

Beginning January 1, 2005, anyone who plans to crush, bale, shear, or shred a vehicle must first remove any mercury light switches from the hood and trunk. This requirement will most commonly apply to auto dismantlers and scrap metal recyclers. Auto dismantlers may find it most convenient to remove these switches when removing the battery, coolant, and brake fluids.

If you operate an auto repair shop, you may not be directly affected by the new regulations. This is because State law does not require removal of mercury light switches from vehicles that are still in service. However, auto repair shops that remove or replace mercury switches must manage them properly as universal waste. Although State law does not require removal of mercury switches from vehicles that are still in service, DTSC strongly encourages motor vehicle repair shops to offer their customers replacement and recycling of mercury switches, including light switches.

Auto Repair Shops: Before you remove mercury switches, be sure you and your employees are thoroughly familiar with how to handle mercury switches safely and properly and what to do in the unlikely event of a mercury spill.

Car owners who would like to replace the mercury switches in the hoods and trunks of their vehicles can go to auto repair shops that have the proper training and equipment.

How should mercury switches be removed?

DTSC has prepared two self-training manuals that provide detailed instructions for properly and safely removing mercury switches from vehicles: *Guide for Auto Repair Shops* and *Guide for Auto Dismantlers*. They are available on DTSC’s Web site at: www.dtsc.ca.gov.

How should mercury switches be stored?

Store removed mercury switches in a closed, non-leaking container that is in good condition. Do not use a metal container, because mercury can react with the container or leak through the seams. Pack the switches with materials, such as bubble wrap, in order to prevent breakage. Containers should be stored where there is little risk of them being disturbed.

*Proper labeling requires marking the container with the words
“UNIVERSAL WASTE -
MERCURY,” or
“WASTE - MERCURY
SWITCHES,” or
“USED MERCURY SWITCHES”*

How long can mercury switches be kept on site?

If you are handling them as universal waste, you may keep mercury switches on site for as long as one year. You must be able to show an inspector that you have not kept waste mercury switches for more than a year. You can do this by writing the date you started to accumulate the switches on the label of the container.

How should I transport mercury switches?

You do not need to use a hazardous waste manifest or a registered hazardous waste transporter to transport mercury switches as universal waste. Instead, you may transport them yourself or use a common carrier. Mercury switches must be transported in a container that meets the requirements discussed above. If a switch is broken or damaged, place it in a sealed plastic bag inside the container.

If you also generate other hazardous wastes, you can use your hazardous waste hauler to transport your mercury switches. You can also use a commercial carrier that accepts universal waste. If you use a commercial carrier, be sure that the carrier knows and follows the rules for transporting universal waste.

If you ship packages of mercury switches by air or by water, you must follow the U.S. Department of Transportation (DOT) regulations for transporting hazardous materials. Whatever the shipping method, a package that contains more than one pound of mercury must meet DOT regulations for transporting hazardous materials.

Where should mercury switches be shipped?

Mercury switches must go to an authorized mercury recycling facility. You may transport your mercury switches directly to a recycler or to a universal waste handler who consolidates switches before sending them to a recycler.

Appendix B lists mercury switch handlers and transporting facilities in California. Appendix C lists waste destination facilities that serve California.

Record keeping

If you remove mercury switches from vehicles, California's regulations require you to keep records for three years. Your records must include all of the following information:

- The number of vehicles that you crushed, baled, shredded, or sheared;
- The number of these vehicles that you found to contain mercury switches;
- The number of mercury switches that you removed from these vehicles; and
- The number of vehicles that contained mercury switches that you could not remove because of accidental damage to the vehicle.

Can mercury switches be replaced?

Yes. Bullet- and ball-bearing- shaped non-mercury switches are available. Replacement switches will work in nearly all vehicles except older foreign vehicles that use a glass capsule (referred to as an ampoule) of mercury. Listed below are two companies that manufacture and supply non-mercury replacement switches.

Note: DTSC is providing this information as a convenience and does not recommend or endorse these companies. You may want to contact either or both companies if you have any questions about replacing mercury-containing switches with mercury-free switches.

Comus International
454 Allwood Road
Clifton, NJ 07012
Tel: 973-777-6900
Fax: 973-777-8405
www.comus-intl.com/productinfo.asp

Signal Systems International
P.O. Box 470, 1700 Route 35 North
Lavallette, NJ 08735
Tel: 732-793-4668
Fax: 732-793-4679
www.signalsystem.com

What if a mercury spill occurs?

Mercury is harmful if inhaled, ingested, or handled, so proper safety precautions must be taken at all times. Beware of mercury switches that are broken, appear to be leaking, or have the potential to leak. Immediately place these switches inside a sealed plastic bag and then into a container as described above. Never attempt to vacuum a mercury spill! Vacuuming disperses mercury vapors into the air and can result in harmful exposure to mercury, both to the person vacuuming and to other people in the area.

If you remove or handle mercury switches, it is a good practice to develop a written plan for responding to a mercury spill. Before removing any mercury switch, make sure there is personal protective equipment and a mercury spill kit nearby and that staff are properly trained to use them. Mercury spill kits cost \$14 to \$75 and can be ordered from laboratory and safety supply stores.

If someone is exposed to mercury, take the following steps.

1. Skin contact—wash the skin with soap and water. Remove any clothing that has come into contact with the mercury and seal it in a plastic bag. Seek medical attention immediately. Properly dispose of the sealed bag of mercury-contaminated clothing using a hazardous waste handler.
2. Eye contact—flush eyes with running water for 15 minutes, then seek immediate medical attention.
3. Ingestion—seek medical attention immediately. Contact your local poison control center or health care provider for further information.

Disclaimer

This fact sheet does not replace or supersede statutes or regulations. Always review the most current statutes and regulations. Mention of vehicle makes and models, repair facilities, or mercury switch handling facilities in this fact sheet is not to be construed as an endorsement by DTSC.

For more information

For information about mercury and mercury switch management and regulatory requirements, please contact the DTSC office nearest you, or call the regional Public and Business Liaisons at:

(800) 72TOXIC (1-800-728-6942)
or visit www.dtsc.ca.gov

DTSC Headquarters (916) 323-2678
1001 I Street, Sacramento, CA 95814

Sacramento Office (916) 255-3617
8800 Cal Center Drive, Sacramento, CA 95826

Berkeley Office (510) 540-3739
700 Heinz Avenue, 2nd Floor, Berkeley, CA 94710

Clovis Office (559) 297-3901
1515 Tollhouse Road, Clovis, CA 93611-0522

Glendale Office (818) 551-2830
1011 North Grandview Avenue, Glendale, CA 91201

Cypress Office (714) 484-5400
5796 Corporate Avenue, Cypress, CA 90630

For general information about mercury and mercury switches

U. S. EPA RCRA, Superfund & EPCRA Call Center 800-424-9346 or www.epacallcenter@bah.com

U.S. EPA, at www.epa.gov/mercury/

U.S. EPA-Region 5, at www.epa.gov/region5/air/mercury/mercury.html

Association of Municipal Recycling Coordinators, at www.amrc.guelph.org/

Appliance Recycling Information Center, at www.aham.org/aric/aric.cfm